nbM from lesioned animals) and 62·4 ± 29·2 (left nbM from unoperated animals). The nbM ipsilateral to the lesion showed a significant (p at least < 0·025, Student's *t* test) decrease of uptake activity compared with the controls.

No known source of afferents to the nbM, apart from amygdala, was involved in the lesion. Therefore, the most likely explanation for the observed decrease in uptake activity to 45% of control is that the well-documented[4] innervation of the nbM by the amygdala is by dicarboxylic acid-releasing neurons. Evidence is emerging that reduced dicarboxylic acid neurotransmission is both a feature of AD[5,6] and impairs learning in the rat.[7] The amygdala is severely affected[8] in AD and may degenerate before the nbM.[6] Cholinergic neurons in the nbM seem to have glutamate receptors[9] so if dicarboxylic acid-releasing fibres from the amygdala to the nbM degenerate in AD this is likely to reduce the activity of nbM cholinergic neurons, should denervation supersensitivity not occur.[10] This may have profound functional consequences as the nbM is the principal source of the cholinergic innervation of the neocortex. Thus degeneration of the amygdala may cause dementia due to a functional cholinergic deficit in the neocortex that precedes the loss of the constituent cholinergic nerve terminals.

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Book reviews

Chemical Neurobiology: An introduction to Neurochemistry. By Henry F Bradford. (Pp 507; £21·95.) Oxford: W H Freeman, 1986.

A basic textbook on the neurochemistry of the nervous system is something which has been missing from our library for too long. Frequently, colleagues and new students ask "Can you recommend an up-to-date text to help me get started in this area?" Until recently, my reply has always been that they need to scour the contents of at least a dozen books to find the information they require. In this respect, Professor Bradford has produced a timely work which I am sure will be avidly sought by those interested in neurobiology.

The book is well organised, dealing initially with the organisation of neuronal systems and their structure and then turning to the critical issue of role of glial cells in supporting the development and functioning of neurons. Not surprisingly, this is followed by a description of brain glucose and energy metabolism, but applied to the manner in which this is essential for normal neurotransmission. The key role of neurotransmitter substances is highlighted in two subsequent chapters which deal with classical transmitters from the point of view of synthesis and storage, mechanisms of transmitter release, the characteristics of neurotransmitter receptors, the distribution of transmitter pathways within the brain, and the actions of drugs on such neurotransmitter systems. Also covered are substances such as taurine, purines and histamine where the evidence for or against a transmitter role is reviewed. Ample space is also given to the increasing evidence for involvement of peptide substances as neurotransmitters. Professor Bradford then turns his attention to aspects of the total functioning of the nervous system firstly examining the manner in which synaptosomal preparations may act as an in vitro means of studying synaptic activity and then specifically dealing with the dynamic characteristics of synapses and their development. The last portion of the book is devoted to functional aspects of the whole nervous system where the author assesses the role of central neurotransmitter systems in behaviour and deals with a variety of neurological, psychiatric and other disorders resulting from apparent failure of neurotransmitter systems.

As for any book of this kind, it could be argued that it does not adequately cover many issues. It, of course, would be impossible to deal with the needs of every individual in such a volume. Professor Bradford has explored many avenues ignored at a basic level by other introductory texts. However, while many aspects of this book are excellent there are some areas which I do not find satisfactory. In places, the classification of neurotransmitter receptors is out of date, but then the author may have been perfectly correct in his concepts at the time of writing. There are also some errors in the designation of drug action and classification in the section on neurotransmitter substances. Finally, I felt that some of the concepts presented on the cause and treatment of neurological and psychiatric diseases were not as robust as they might have been and, indeed, some statements appeared misleading in the light of our present knowledge. However, while it is easy to find fault, the author deserves credit for the text as a

whole. It is not easy within the complexities of modern neurochemistry to present data in a form which is understandable to those requiring an introduction to this area. This is certainly a book I shall recommend to my postgraduate students and to clinical colleagues.

P JENNER

Alzheimer's Disease and Related Disorders. *British Medical Bulletin Vol 42 Number 1.* Edited by M Roth and LL Iversen (Pp 116; £16·00.) Edinburgh: Churchill Livingstone, 1986.

The British Medical Bulletin has a well-deserved reputation for publishing high quality, authoritative and up to date reviews on topical and controversial subjects. In this singular collection of essays it does not fall short of this standard. Sir Martin Roth introduces this issue by reminding us of the increase in the ageing populus and the attendant increase in demented patients. This is already both a medical and a social problem, and one which in my estimation will require both recognition and the formulation of definite policies by national governments of whatever colour.

This volume is mainly devoted to recent developments. The contents survey epidemiology, clinical and neuropsychological assessment, genetics, brain imaging, neurophysiology and pathology. More specialised chapters cover the cholinergic disorder (E Perry), transmissibility (Corsellis) and non-cholinergic pharmacological treatments (Kopelman and Lishman).

It is now clear that the Alzheimer brain is abnormal in respect of many neurotransmitters and that the serviceable cholinergic hypothesis, though it sheds light on the amnesic defect, fails to explain any fundamental processes in causation. The similarities with Parkinson's disease (Quinn, Rossor and Marsden) and the claimed overlap of these two very common illnesses of late life is expounded. And yet the therapeutic response of Parkinson's disease has not been mirrored by the successful rational use of cholinergic agonists in dementia (Hollander *et al.*) It is a sign of our current ignorance of both cause and remedy that the vital issues of management (in the general sense of looking after afflicted patients and appraising resources, advocacy and education) need a good review, albeit with a strong sociological bias (T Arie).

This issue of the BMB contains a mass of data and sources, valuable both for the basic scientist and clinician. Opinions are ventured by the braver and perhaps the more mature contributors, lending a more personal and stimulating aspect to their chapters. All the major problem areas are identified and explored, so that if the going is tough in places, the reader's efforts are likely to be rewarded. I much prefer this compilation of data and references to the multitude of more ephemeral published symposia available.

JMS PEARCE

A Method of Psychiatry. *2nd edition.* Edited by Stanley E Greben, Vivian M Rakoff, George Voineskos. (Pp 474; $32.75.) Philadelphia: Lea & Febiger. UK Distrib: Quest-Moridien Ltd, 1985.

This is the second edition of the undergraduate textbook of psychiatry prepared by faculty members of the Department of Psychiatry of the University of Toronto. It is designed to reflect their particular methods of teaching which are broadly based, and regard the psychiatrist as physician and healer. The second edition aims to expand on the first, following the changes in knowledge and emphasis in the speciality with particular reference to old age, newer ideas about schizophrenia, psychosomatic mechanisms and the relationships between psychiatry and other medical specialities. It is a difficult book to review in that it must presumably complement a teaching course to which the reader does not have access and which is clearly more detailed and academic than undergraduate courses in this country.

The book is divided into a number of sections, the later, clinical ones being mainly of quite a high standard, and at a level more appropriate to postgraduate students. The content includes a wide range of approaches to all the main groups of disorders and some helpful references. The "how to do it" chapters assume that a psychotherapeutic relationship is the ultimate aim, but the chapters on history-taking and examinations have some good points.

However, the early chapters are very disappointing, containing discussions in great and confusing depth on some subjects (such as infancy and childhood) whilst ignoring totally the difficulties of early adult life and allowing only two and a half sides to a very "middle class" account of old age. There are at least four chapters dealing with aspects of psychosomatic relationships, whose definitions range from the non-existent to the multiple and conflicting and would require considerable sophistication to make sense of. It is hard to see the first two sections as a useful introduction to the rest of the volume and for our use it might be better to suggest using the contents almost in reverse order.

In summary this book might be of some use to postgraduates, but would not be helpful to most undergraduates. It would not be a book to invest in, if funds were limited.

ISOBEL CARD

Neurohistochemistry: Modern Methods and Applications. Neurology and Neurobiology Vol 16. Edited by Pertti Panula, Heikki Paivarinta, Seppo Soinil. (Pp 710; £39·00.) New York: Alan R Liss Inc, 1986.

This is largely a collection of review articles, devoted to recent applications of immunohistochemistry to the study of neurotranmission; it is dedicated to the pioneer Scandinavian neuro-histochemist, Olavi Eranko.

The three parts are devoted to techniques, developmental studies and neurotransmitter systems. In the first, interesting discussions on the use of recombinant-DNA technology in the identification of neurotransmitter prohormones and on the use of image analysis in studies of the hypothalamic nuclei are included. The middle part concentrates on neuronal development with three contributions devoted to the SIF cell of sympathetic ganglia. The effects of host thyroid depletion on developing rat parietal cortex, are explored and there is a wide ranging, well-illustrated summary of peptidergic neuron ontogeny. In the final part, an historical chapter by Hokfelt contains a notable section on neuropeptide coexistence within neurons (also discussed in a later article), and there are interesting contributions on benzodiazepine receptors in rat and human brain and the synaptic connections of immunolabelled catecholaminergic neurons studied ultrastructurally.

FR WELLS

The Pathology of the Myelinated Axon. *(Current Trends in Neurosciences Series.)* Edited by M Adachi, A Hirano, SM Aronson. (Pp 406; £105·75.) Tokyo: Igaku-Shoin. UK Distrib: Stonebridge Distribution Ltd, 1985.

It is not stated either by the publishers or the editors whether this beautifully produced